

A Future Without Landfills?



Salinas Valley Recycles takes a new look at the best approach to managing our trash

Taking a New Look at Trash

Why Salinas Valley residents should care about what happens to their garbage once it's out of sight

BY KATE GONZALES

Salinas Valley Recycles is looking at smarter ways to manage the region's trash. The goal is to stabilize long-term rising costs, create more jobs, grow the economy, maximize the value of what is thrown away and clean up the environment for future generations.

Residents' participation in the process will help Salinas Valley Recycles (SVR) determine if there is a different and better way to manage our community's trash. The fact is, what happens with our garbage decades, even centuries, after it's taken from our homes matters for the health of Salinas Valley, both environmentally and economically. Salinas Valley Recycles, the joint powers authority responsible for managing the region's solid waste, is researching five projects that could potentially reshape our approach to trash. The projects must follow the California Environmental Quality Act process, which aims to reduce environmental harm and enhance public participation.

Residents of the SVR service area, which includes the cities of Salinas, Gonzales, King City, Soledad, Greenfield and eastern unincorporated county areas, are encouraged to participate, keep informed and be engaged as SVR considers these options.

THE OPPORTUNITY

But why should Salinas Valley residents care about what happens to trash once it's out of sight?

"Because waste is a resource," Warner says. "Essentially any substance you can buy in any store anywhere is buried in that landfill."

So why not put that waste to work? The potential projects could include going to Monterey Regional Waste Management District for recycling (material recovery processing) and/or landfilling, or the construction of a Clean Fiber and Organics Recovery System, in which trash is heated with steam in an autoclave and automatically separated based on

"WASTE IS A RESOURCE."

SUSAN WARNER

Former Diversion Manager/Assistant General Manager, Salinas Valley Recycles

material type. Cardboard, papers and organic materials (like food scraps) are broken down and separated. The separated paper is sold to cardboard manufacturers. Items like aluminum and plastic are recycled. And the organic-rich moisture coming from the trash is used to make electricity for the facility and region.

The autoclave steam and low-heat cooking process alone significantly reduces the volume of waste, and the entire technol-

ogy system is estimated to reduce landfilling by as much as 80 percent.

"We want to get away from landfilling and, again, utilize waste as a resource, instead of leaving a future obligation to the next generation," Warner says.

THE CHALLENGE

In approximately 40 years, Johnson Canyon Landfill located east of Gonzales will reach its capacity. California state law requires all counties to have at least 15 years of landfill capacity available. And these days, the landfill solution to solid waste is inadequate. That's because landfills are not sustainable, present long-term environmental and financial challenges to host communities and permanently impact the land.

Susan Warner, former Diversion Manager/Assistant General Manager with Salinas Valley Recycles, says continuing to rely on landfills is problematic. There is diminishing landfill capacity and finding sites for new landfills is difficult, as most people don't want to live near one.

These challenges, however, give SVR a chance to take the long view by making smart changes benefiting citizens today. SVR envisions a future without landfills and can make choices today to get more value and jobs out of the area's trash for years to come.

Continue reading to learn about the projects Salinas Valley Recycles is considering — and how you can participate!

CEQA 101

The California Environmental Quality Act, or CEQA, was passed in 1970 to reduce the environmental impact of projects statewide. While considering new projects, planners like Salinas Valley Recycles must go through the CEQA process, which aims to increase public participation and eliminate or reduce potential environmental impact.

This process includes:

- Public disclosure of a project's environmental effects identified in preliminary research
- Prevention or lessening of the environmental effects through mitigation measures
- Promoting public participation in the environmental review
- Encouraging the collaboration between government agencies

Are Landfills Worth it?

Weighing the costs of landfills

BY MATT JOCKS

When it comes to discussing the cash of trash, it is a classic comparison of short-term costs and benefits versus long-term costs and liabilities.

So says Patrick Mathews, General Manager and Chief Administrative Officer of Salinas Valley Recycles, which is at the forefront of moving the Salinas Valley away from unnecessary and unsustainable reliance on landfills.

"Landfills look like the easy way to go because they are still somewhat cheaper to run," Mathews says. "But I think people are realizing that [landfills] don't present many positives in the long run."

At first glance, dumping waste in a hole is a simple plan. However, because that material involves environmental risk, the regulatory costs have been climbing steadily — and with it the risk of long-term public financial liability. This trend will not change.

At Salinas Valley Recycles, in addition to the basics of labor, fuel and equipment, there are fees to every level of government. Total landfill operating cost tops \$5 million annually, including possible improvements and long-term liabilities.

The reliance on landfilling, as opposed to re-use, also carries the cost of all the lost materials we throw away.

Currently, much of what comes out of people's recycling bin is hauled to a plant to be separated, then taken to the docks and shipped overseas, mostly to China. Customers may see it again in the form of the box their Amazon order comes in or the bottle that holds their soda.

"PEOPLE ARE REALIZING THAT [LANDFILLS] DON'T PRESENT MANY POSITIVES IN THE LONG RUN."

PATRICK MATHEWS
General Manager & CAO, Salinas Valley Recycles

"As a country, we invest a lot of money to pull the oil out of the ground and refine it, turn those chemicals into plastic," he says. "We've already invested that money. Why would we take that bottle and send it to another country so they can profit from our original investment?"

Staying with the landfill model involves other lost opportunity costs.

"If I want to have a landfill, that basically involves some truck drivers and maintenance," Mathews says. "That's maybe a dozen jobs."

A paper fiber, organics and/or recyclables recovery systems facility to process the products for reuse could generate five or six times more jobs.

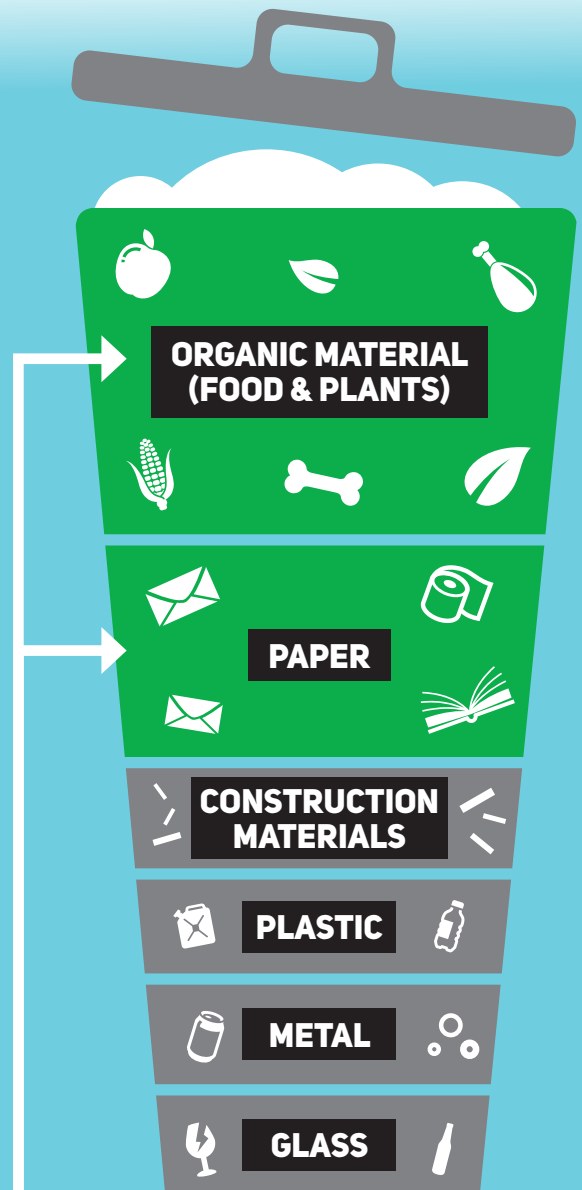
"It involves a larger employment base," he says. "And that stimulates demand in the area, creating jobs in local services."

Those arguments, along with the environmental impacts, and the creeping costs of landfill regulation that get passed on to customers in their monthly service bill, is creating the pressure for a change in direction.

"The biggest hurdle we face is sociopolitical," Mathews says. "Many of our community members and politicians are deeply concerned with increasing costs, and landfills still present a lower cost path in the short run."

"But the other side is the push for sustainability. Sustainability means creating jobs and economic benefits for the area, reducing greenhouse gases, among other things. Cheap is not always better."

SO, WHAT'S IN THE TRASH?



65% of materials that fill our garbage are organics (food scraps and yard waste) and fiber (paper and cardboard), according to a 2008 Salinas Valley Recycles study. These materials can currently be diverted or repurposed using new technology.

THE GLOBAL DEMAND FOR RECYCLING

It may be best to take the long view when considering the market and economics of recycling — as in, half a world away.

The predominant market for recyclable materials including paper, metal, and plastic from the United States is in Asia, primarily China. Recently, that market has been declining.

"Several years ago, recycling was making money hand over fist," says Patrick Mathews, General Manager and Chief Administrative Officer of Salinas Valley Recycles. "As the economy started to slow, we've had a glut of material and the value for recycled materials has dropped."

That slowdown has not been offset by greater demand in the U.S., and the decline of the American manufacturing sector has long made it a secondary market.

But there is an opportunity to turn this trend around. With increasing concern over materials like plastic and Expanded Polystyrene Foam, the demand for recycled fibers used to make container board or

cardboard is growing. The proposed projects Salinas Valley Recycles is considering could either use a conventional material recovery facility to capture the cardboard or a Clean Fiber and Organics Recovery System that would produce this fiber, that could then be sold to markets here in the Bay Area and not overseas.

Trash Turned to Treasure

Salinas Valley Recycles looks at ways to become sustainable

BY NATASHA VONKAENEL



Building a sustainable world means looking at every established practice and reinventing it for a new, more economically feasible and environmentally conscious approach that creates jobs. That includes even the less glamorous of systems, like what we do with our trash.

Each day, the average American produces 4.3 pounds of waste. While 34 percent of that will be recycled or composted, the rest, for the most part, ends up in landfills. Given what we know now about landfills, that cannot be a long-term solution. Rather, it is an enduring environmental responsibility and cost.

"When you build a landfill you are committing, for the next 50 to 100 years or longer, to baby-sit a pile of garbage and hope it doesn't cause other problems to the environment," explains Bill Orts, research leader for the U.S. Department of Agriculture. That hope is meager, at best.

In 2013, decomposing garbage in landfills in the United States released more than 114 million metric tons of methane, making them the third-largest human-caused source of methane emissions in the country. While landfills also release other dangerous greenhouse gases, including

carbon dioxide (Co2), methane is the most worrisome. It traps over 25 times more nitrous oxides in our atmosphere than Co2, hastening the impacts of global warming.

"WE CAN BASICALLY ADD VALUE TO GARBAGE."

BILL ORTS

Research leader for the USDA

Additionally, as trash decomposes, landfills concentrate toxins that can leach into surrounding land and groundwater, contaminating the water supply and damaging agricultural land without expensive controls and treatments. Climate change and earthquakes also pose real risks for Californians and their landfills.

The solution?

"We can basically add value to garbage," Orts says. Salinas Valley Recycles was home to a years-long pilot project, where researchers took eight tons of trash a day and steam treated it in an autoclave.

"You literally put it into an industrial mixer and you introduce steam," Orts explains. The heat from the steam breaks down and sterilizes the different waste materials so that similar substances have a similar consistency. Some plastics turn into small plastic beads, aluminum cans and glass bottles rise to the top and paper products coalesce into a sterilized pulp. At the end, they can all be filtered out by size and each isolated part of the garbage is reused appropriately.

For example, paper pulp can be reused to create recycled cardboard, saving forests from unnecessary eradication. And, sanitation workers no longer need to sort through our waste. Waste that could have been recycled is kept out of our landfills.

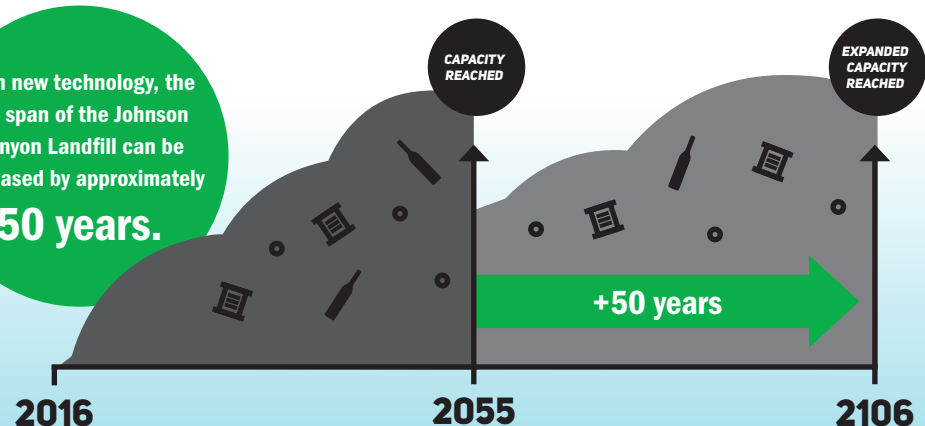
Salinas Valley Recycles is evaluating the possible expansion of the pilot project to process hundreds of tons of garbage a day.

NEARING THE LIMIT

The trend of disposing solid waste in landfills could be falling by the wayside as more environmentally conscious and economically beneficial approaches are considered.

The State of California requires all communities to maintain at least 15 years of ongoing landfill capacity. The **Johnson Canyon Landfill** east of Gonzales is the only landfill Salinas Valley Recycles runs. It is on track to reach capacity in about four decades, but with the intervention of innovative green technology, that estimate can be more than doubled.

With new technology, the life span of the Johnson Canyon Landfill can be increased by approximately **50 years.**



Making Trash Work for Us

BY KATE GONZALES

What if there were a way to cut the amount of waste that goes into the landfill by up to 80 percent – AND get more jobs and value from the material saved?

There are ways, and in an effort to reshape how the region manages its garbage to maximize its value at a reasonable cost, Salinas Valley Recycles is considering and fully studying five projects – of which Global OrganicS Energy's (GOE) Clean Fiber and Organics Recovery System is a process that could be utilized. This system recovers materials that would otherwise be sent to a landfill, and

is one of only three types of post-recycling solid waste management systems that don't require pre-sorting. The others are landfilling and incineration – both of which, environmental studies have shown, have potentially greater impacts on the environment.

If a project is selected that uses GOE technology, it would be the first of its kind in the United States.

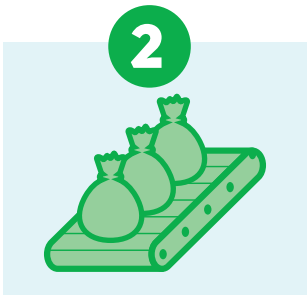


THE CLEAN FIBER RECOVERY PROCESS, STEP-BY-STEP



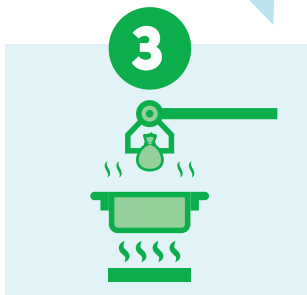
COLLECTION

Garbage is picked up from homes and delivered to the GOE Clean Fiber and Organics Recovery System site.



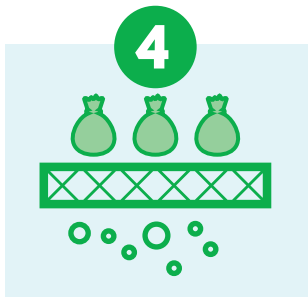
DELIVERY TO AUTOCLAVE

All the unsorted trash is placed on a conveyor and delivered into the steam autoclave.



STEAM HEAT

Once inside the autoclave, the waste is steam-cooked at a low temperature. After 45 minutes, the waste comes out sanitized and reduced in volume by 60 to 70 percent.



SORTING

Materials are run over screens from which unclaimed metal and plastic recyclables are extracted, cleaned, and sent to a recycling center, so recycling is maximized.



FIBER WASHING

The remaining paper and organic materials are fiber washed then diverted for sale to container board (cardboard) manufacturers.



POWERING THE PLANT

The dirty water, or "fiber wash water" that results from this process is converted to methane to power the GOE plant, with extra energy also available for commercial sales.



WATER CIRCULATION

Cleaned water is added, then recirculated back through the system. No dirty water is discharged to the sewer.

ENVIRONMENTAL & ECONOMIC ATTRIBUTES



Requires no pre-sorting, leading to greater efficiency



Recovers up to 80 percent of landfill-bound waste for re-purposing and reuse



Reduces the amount of trash sent to the landfill, which helps decrease the amount of methane released into the atmosphere



Helps Salinas Valley Recycles meet the California 2020 goal of diverting at least 75 percent of waste from landfills



Would offer more technical job opportunities and add at least 85 direct new jobs



Supports local economic development goals



The Need to Lean Green

Why Salinas Valley Recycles should consider new approaches to trash as a resource

BY MATT JOCKS

Taking out the garbage used to be a simple process. Dump it in the can and wait for the trucks to come by, collect it and take it to a landfill, hopefully far away and not downwind.

Then came more people, more garbage, more houses being built closer to the landfills and more awareness of what might be piling up and seeping down into the ground.

"The landfills that are more than 30 or 40 years old were built simply as a hole in the ground," said Patrick Mathews, General Manager and Chief Administrative Officer at Salinas Valley Recycles. "Many of them are unlined. And engineers say even our more modern lining systems won't last forever."

What does that mean?

Decomposing organic matter create gases, primarily methane and carbon dioxide, not all of which can be captured. Potentially toxic chemicals, particularly at sites built before restrictions on dumping such chemicals, possibly leaking into ground water. Not to mention the environmental impact of a fleet of trucks constantly hauling the garbage to the landfills.

If improving the technology of landfills is a band-aid, increasing the reuse of products looks more like real medicine.

It started simple, separating waste into solid, yard waste and recyclables. Bottles and mulch found new life. One step Salinas Valley Recycles is considering is increasing the reuse of pulp — paper products like the massive number of cardboard containers that hold the products people order online.

Using available and emerging technologies to reuse these paper products has a positive chain reaction — reducing the amount of waste in landfills, saving trees and reducing the negative impacts of virgin paper processing.

"That has its own waste and creates its own impact on the air and water," says Jeff Zimmerman, Project Manager at AECOM and a consultant to Salinas Valley Recycles.

While the chance of a significant environmental event related to landfills, such as an earthquake, landslide, floods or chemical-related fire is always present, the impact of increasing regulations may be a more considerable driver of change.

"Getting a permit for a new landfill is a very difficult process now," Zimmerman says. "You have to have buffers between it and residential areas and that's becoming harder to find."

"There is movement towards having a more holistic facility that includes processes to reuse. You know, there's not a lot of joy about building new landfills."

"THERE'S NOT A LOT OF JOY ABOUT BUILDING NEW LANDFILLS."

JEFF ZIMMERMAN
Project Manager, AECOM

**A FUTURE
FREE OF
WASTE**



For most, the plastic bottles and paper packaging that are part of everyday life end their usefulness in a matter of moments. Just like that, they turn from container to waste.

Or do they? Is this material only waste if it is, in fact, wasted?

Salinas Valley Recycles envisions a different future for those packaging items, one in which they can be re-purposed. The Clean Fiber and Organics Recovery System project option that Salinas Valley Recycles is considering could make re-purposing recyclables as well as organic materials possible. It would also create jobs and would even use the "fiber wash water" or the organic liquids extracted from the recovery process, to power the system.

Instead of continuing to send most of our recycled material abroad, the proposed Clean Fiber and Organics Recovery System could keep the economic benefits in the U.S.

A Look at the Options

Salinas Valley Recycles eyes options for managing trash

BY MATT JOCKS

Salinas Valley's waste may be piling up on the ground, but the future is up in the air when it comes to dealing with it.

As the area seeks to meet the requirements of the California Environmental Quality Act (CEQA), as well as the state's goal that 75 percent of waste is recycled by 2020, Salinas Valley Recycles is looking at five options for the future of waste management and reuse.

The options are in the review process, awaiting the completion of economic benefit and environmental analyses. The outcome will be presented in an Environmental Impact Report (EIR) which will outline the pros and cons of each project.

Here is a brief look at the possibilities:

DELIVER WASTE TO THE MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT

This project would not require any new facilities to be built. Instead, the Monterey Regional Waste Management District would receive most of the Salinas Valley trash and process it for recycling and/or directly bury it.

- Commercial and waste haulers would drive directly to the Monterey Peninsula Landfill

- Requires an increased number of trucks and public vehicles transporting materials using new routes to MRWMD's facility
- Existing Salinas Valley Recycles Sun Street facility would close and public would drive to Monterey Regional Waste Management District for services

INCREASES
RECYCLING



FULL
PUBLIC
SERVICES



NO PROJECT

As with any set of options under CEQA review, the option of no project must be considered.

If the no project option is selected, all options currently under consideration will be placed on hold. However, all stakeholders could continue to explore the benefits of the various options. Some

improvements would likely be made to the materials recovery center on Sun Street. However, the more ambitious Clean Fiber and Organics Recovery System, or consolidating Salinas Valley waste at the Monterey Peninsula Landfill, would be put on hold.

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PUBLIC
SERVICES



ALL-IN-ONE FACILITY

This proposal would involve the construction of a **new facility** that would include both a **Transfer Station/Materials Recovery Center** for **increased recycling** as well as a **Clean Fiber and Organics Recovery System**.

This project would allow Salinas Valley Recycles to collect and process:

- Up to 1,500 tons of waste per day
- Full public services** including municipal solid waste, yard waste, recyclables and household hazardous waste

SITES CONSIDERED:

Harrison Road, Salinas

- Direct freeway access
- Architectural design will be important due to highway visibility

CLEAN FIBER
RECOVERY
SYSTEM



INCREASES
RECYCLING



NEW
FACILITY



FULL
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TRANSFER/MATERIAL RECOVERY ONLY

This project would include only a transfer station and a material recovery center in one of three sites. A Clean Fiber and Organics Recovery System could also be built, but on a separate site.

Materials that could be re-purposed through the Clean Fiber and Organics Recovery System would be transferred to one of two proposed locations — Johnson Canyon Landfill in Gonzales or the Harrison Road site.

SITES CONSIDERED:

Harrison Road

- See site description above

Crazy Horse Closed Landfill, Salinas

- Capacity to transfer waste from all of north Monterey County

- Set back from highway, but accessible

Sun Street, Salinas

- "Temporary" facility for the past 10 years
- Mostly industrial area
- Permanency could improve efficiency
- Opportunity to lessen the impact of noise and dust on its neighbors

FULL
PUBLIC
SERVICES



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NEW
FACILITY



CLEAN FIBER RECOVERY SYSTEM ONLY

This project would include the construction of the Clean Fiber and Organics Recovery System. This system could potentially have environmental impacts, including steam release. Building the fiber recovery system alone, however, would reduce truck traffic.

SITES CONSIDERED:

Johnson Canyon Landfill, Gonzales

- Remote setting
- Requires road improvements to accommodate increased traffic. Salinas Valley Recycles and Monterey County have made plans to construct those road improvements to the landfill.

Harrison Road

- See site description at top

INCREASES
RECYCLING



CLEAN FIBER
RECOVERY
SYSTEM



NEW
FACILITY



You Have a Say!

Salinas Valley Recycles considers new projects in the community

We generate garbage every day — and it has to go somewhere.

Salinas Valley Recycles is evaluating the options for how the region manages its garbage — with a vision of eliminating the need for landfills and using waste as a resource. As Salinas Valley Recycles considers options to divert trash from the Johnson Canyon Landfill as it approaches capacity, it wants the wider

community to be informed of the process and provide input.

“It’s important to hear from the public,” says Simon Salinas, President of the Salinas Valley Recycles Board of Directors. “We want to make sure we’re listening to what the public has to say.” We can’t continue to waste our waste. Help Salinas Valley Recycles achieve a future without landfills!



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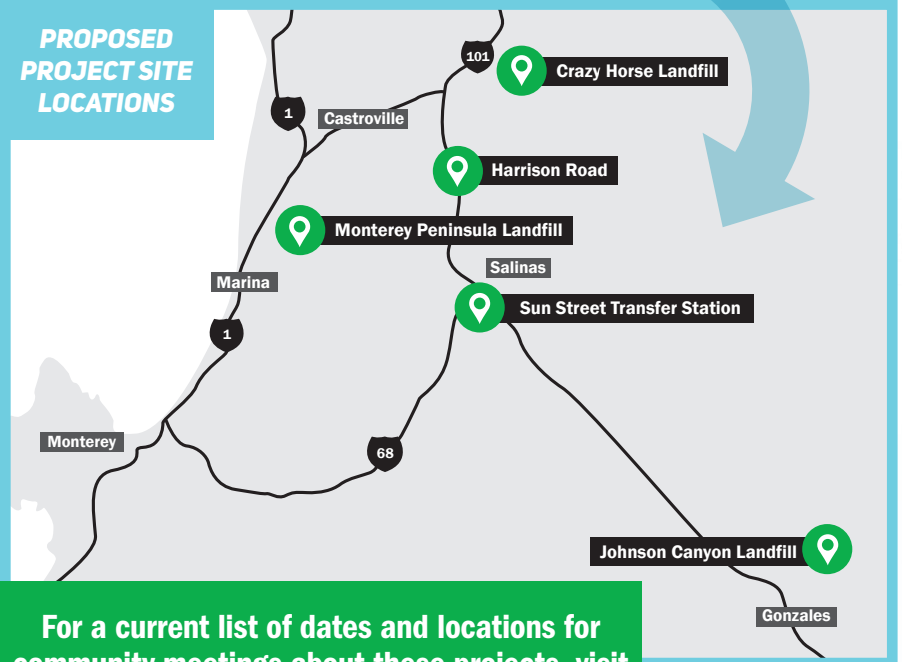


831-775-3000



www.salinavalleyrecycles.org

PROPOSED PROJECT SITE LOCATIONS



For a current list of dates and locations for community meetings about these projects, visit www.salinavalleyrecycles.org.

